

**Video monitoring assessment of coral reefs in proposed marine parks
St. Croix, United States Virgin Islands**

Year1Final Report

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By

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Executive Summary:

The U.S. Virgin Islands are surrounded by diverse and economically important marine environments. Like many near shore marine environments around the world, the coral reefs and other habitats of the Virgin Islands are susceptible to negative impacts from commercial and recreational human activities. To effectively manage and maintain these important environments, the government of the Virgin Islands in coordination with federal agencies has developed a marine park management plan dedicated to sustainable use of these resources by recreational and commercial fishermen, tourism operators, boaters, residents and visitors to the Virgin Islands. The intent of this project is to establish protected areas within the Territory of the U.S. Virgin Islands to protect and manage our coral reef ecosystems. To help establish the status of the coral reefs in the Virgin Islands and determine the effectiveness of the management plan, the Center for Marine and Environmental Studies at the University of the Virgin Islands has begun a monitoring project utilizing digital video and diver surveys at eight sites surrounding the island of St. Croix, with additional sites throughout the islands to be added in the future.

Due to time and other constraints while scuba diving, video monitoring techniques offer distinct advantages to other non-photographic reef monitoring techniques. Specifically, video monitoring allows divers to sample larger areas of the reef in less time. Also, video sampling allows data to be collected by experienced and capable divers who may not have extensive training in identifying a high diversity of organisms in the field. Identification and analysis by trained researchers take place on land, without the constraints of scuba diving. Digital video data also offers a visual representation of the sampled area that can be preserved in a variety of media and shared electronically with other researchers throughout the world. In this study, CMES used a digital video camera in an underwater housing to tape six 10 m transects at each of the eight sites, except for Buck Island, where three transects were taped. Images from the tapes were transferred to computer, where software applications were used to quantify coral diversity and the percent benthic cover of corals, algae, and other organisms. Divers also performed surveys to document coral bleaching and disease and to count the number of *Diadema antillarum* sea urchins, an indicator species of reef condition. While the video monitoring method does have specific disadvantages when compared to non-photographic techniques, the advantages it does offer make it well suited for monitoring the reefs of the Virgin Islands.

As this is the first application of the video monitoring technique for these areas, the data are presented here as a baseline to compare with future samplings to determine changes in the status of the coral reefs surrounding the Virgin Islands. The substrata of the eight sampled sites were comprised mostly of dead coral covered with turf algae, with varying degrees of living hard coral, macroalgae, sponge, gorgonian and non-living substrate cover. Coral species were similar among the sites, with ten species being dominant. Coral diversity varied among sites and a strong negative correlation between the percent cover of turf algae and macro algae was found. The fish populations were dominated by herbivorous species (parrotfish and surgeonfish). Sites along the north shore of St. Croix typically had greater densities of reef fish than elsewhere. These data will be available on

the University of the Virgin Islands web site in the near future. The web site will allow local and federal government agencies, public and private organizations and the general public to gain access to these data.

I. Introduction:

The U.S. Virgin Islands consists of three large islands, St. Thomas, St. John and St. Croix, and numerous smaller islands surrounded by a diverse, tropical marine environment. The islands of St. Thomas and St. John are joined by an extensive shallow water platform that connects them to Puerto Rico and the British Virgin Islands. Forty miles to the south of St. Thomas and St. John, St. Croix lies on a separate platform. It is separated from St. Thomas and St. John by the deepwater Virgin Islands Trough (over 7,300 m deep).

The St. Thomas/St. John platform extends 13 km to the south of the islands at a maximum depth of 46 m and then almost vertically plummets to depths of over 4000 m. The platform also extends about 32 km north of the islands with the depth gradually increasing to over 300 m. Extensive fringing reefs are located along the shoreline of the large and small islands on the shelf. These reefs are often associated with mangrove forests and seagrass and algal beds. Large shallow water patch reefs are found within a mile of the islands' shoreline. Offshore, deeper water habitats include deepwater coral reefs, hard bottom communities, sand plains and algal beds. Diverse, shelf slope or wall habitats are likely to exist, but these have not been studied owing to their great depth. The St. Croix marine environment is similar to St. Thomas/St. John in many ways, but differs in its more limited shelf area and more extensive reef development. The reefs of St. Croix include barrier and bank reefs, which are not found on the St. Thomas/St. John platform.

The marine environment is crucial to the Virgin Islands economy. Over three hundred artisanal commercial fishermen fish full-time or part-time in territorial and federal waters on all three islands. In tough economic times, fishing is an important means of supplemental income for many people. Sportfishing also makes an important contribution to the economy, especially on St. Thomas. Virgin Islanders enjoy recreational fishing, fishing from docks, rocky shorelines and beaches in the evening and on weekends. Many people own small boats and enjoy handlining and trolling.

Tourism drives the Virgin Islands economy. The marine environment with its clean, clear water and fringing sandy beaches is our major tourist attraction. The waters of the Virgin Islands are ideal for sailing because of the persistent tradewinds and the numerous bays that provide protected anchorages. The coral reefs and other habitats are essential to the lives of hundreds of thousands of species including the economically important queen conch, whelk, snapper and grouper, harbor diverse species and attract thousands of snorkelers and divers each year.

Because many of the coral reefs of the Virgin Islands are found close to shore, they are susceptible to: polluted runoff from adjacent watersheds; commercial activities such as the development and operation of hotels, marinas, and ports; anchor damage by boaters, over-fishing and damage from snorkelers and scuba divers. Many marine and nearshore environments around the world also face these problems.

Objectives for Developing the Marine Park Management Plan

In order to protect the coral reefs, enhance tourism, manage recreational and commercial fishing and maintain other recreational activities in a sustainable manner, the territorial and federal waters of the Virgin Islands must be effectively managed. The Virgin Islands government wishes to develop a marine park management plan in coordination with the federal agencies that have jurisdiction over the shelf areas outside of the territorial limits surrounding St. Thomas, St. John and St. Croix. The marine park management plan will include provisions for the sustainable use of marine resources by recreational and commercial fishermen, tourism operators, boaters, residents and visitors to the Virgin Islands. An upland/marine ecosystem cannot be effectively managed by dividing the responsibility between different political entities. They must be managed as a whole.

The intent of this project is to establish protected areas within the Territory of the U.S. Virgin Islands to protect and manage our coral reef ecosystems. Elements of the project include: defining compatible uses for protected areas; surveying alternative sites; delineating sites, legally designating and demarcating sites; preparing and implementing management plans; promulgating regulations for protected area; conducting monitoring and maintenance activities; and, conducting education and enforcement activities. No-take ecological reserves will need to be established to provide needed protection to a balanced suite of representative Virgin Islands' coral reefs and associated habitats, with a goal to protect at least 5% of all coral reefs and associated habitat types by 2002; at least 10% by 2005, and at least 20% by 2010. (USCRTF, The National Action Plan to Conserve Coral Reefs, March 2000).

Proposed Marine Park Boundary

The boundaries will be established with the full participation and support of respected representatives from the recreational and commercial fishing communities, environmental groups, divers, federal and local government agencies and others. The Marine Park boundaries will be based on what makes sense ecologically and economically, not what makes sense jurisdictionally.

Marine reserves will be established within the boundaries of the proposed marine park. The term "marine reserve" refers to an area where all harvesting is prohibited and where efforts are made to eliminate detrimental effects of recreational and commercial uses, as well as development of adjacent shorelines. The objective of establishing such reserves is to allow the recovery and replenishment of the fishery and benthic resources.

There is irrefutable evidence that additional regulations and enhanced enforcement of existing regulations are necessary to reverse serious declines and degradation in the marine resources. Resource managers from the local government and National Park Service (Garrison 1999) have expressed an interest in establishing marine reserves in an effort to protect functional reef ecosystems, to allow their recovery where damage has occurred, and to allow recovery of fish assemblages. There is an urgent need to designate "no-take" areas, for example: Lang Bank, Salt River, Buck Island ecosystem.

Marine reserves in the USVI should be established as soon as possible to reverse the alarming declines and degradation in fishery and benthic resources. Establishment of such recovery zones will be a start in implementing the National Action Plan to Conserve Coral Reefs that was officially adopted in March 2000.

Representatives from the major cooperating agencies (federal and territorial) met on May 4, 2001 to outline the project described in this proposal. At that time, Ms. Janice Hodge, Director, Division of Coastal Zone Management, indicated that the highest priority sites for Department of Planning and Natural Resources in year 1 are in the St. Croix Coral Reef System Area of Particular Concern, which encompasses a large area around the eastern half of the island out to 100 fathoms. In Years 2 and 3, sites from St. John and St. Thomas will be added. Locations of future marine reserves (no take zones) will be given priority. In addition, other high priority areas are those where there is evidence of recovery of elkhorn coral, *Acropora palmata*, the primary, shallow water reef-building species that was decimated on USVI reefs from white band disease and a series of hurricanes.

II. Methods:

Between April and October, 2001, the University of the Virgin Islands Center for Marine and Environmental Studies used digital video transects to assess the benthic cover of eight sites in St. Croix, USVI (Table 1). Four of the sites were within the proposed Marine Park boundary (Figure 1). Because of specific advantages of the video method, the team used digital video monitoring techniques outlined in the protocol developed by the U.S. Geological Survey, Biological Resources Division Virgin Islands Field Station, St. John (Appendix I: Rationale for using the video method).

Table 1. Site location information and number of coral and fish transects at each site.

Site	Date Sampled	GPS Coordinates	Depth (ft.)	No. of Transects Video / Fish
Buck Island	8/10/01	N 17° 47.122, W 64° 36.550	35	3 / 0
Cane Bay	4/25/01	N 17° 46.433, W 64° 48.810	30	6 / 12
Jacks/Issacs Bay	8/02/01	N 17° 44.588, W 64° 34.309	35	6 / 6
Lang Bank	8/01/01	N 17° 44.443, W 64° 32.209	50	6 / 6
Long Reef/Eagle Ray	7/26/01	N 17° 45.688, W 64° 41.929	30	6 / 12
Salt River East wall	10/12/01	N 17° 47.221, W 64° 45.445	40	6 / 12
Salt River West wall	8/23/01 & 10/12/01	N 17° 47.116, W 64° 45.564	20	6 / 12
Sprat Hole	9/25/01	N 17° 44.038, W 64° 53.722	40	6 / 6

Divers established six permanent 10 m transects at each of the sites, except for Buck Island, where three transects were established. The teams randomly placed the transects at uniform depths in areas that were judged to be representative of the reef at each site. Divers marked the transects by driving two stakes 10 m apart into non-living areas of the reef and stretching a measuring tape or line between the endpoints. One diver swam along each transect videotaping the benthic cover using a Sony digital camcorder in a Light and Motion Stingray 2 underwater housing. The diver swam at a uniform speed, pointing the camera down and keeping the lens approximately 40 cm above the substrate at all times. A guide wand attached to the camera housing was used to help the diver maintain the camera a constant distance above the reef. At the end of each transect, the diver swam back in the opposite direction, holding the camera at an oblique angle, providing a wider view of the reef. A diver also swam along each transect counting the number of *Diadema antillarum* sea urchins and noting diseased and bleached corals within 1.0 m on either side of the transect line. The dive team sampled all transects for each site on the same day, except for Salt River West Wall, which was sampled on two days. After taping, between 22 and 31 non-overlapping images per transect were captured and saved as JPEG files on a computer using a Sony video capture card. Microsoft Excel and Adobe Photoshop were used to superimpose ten randomly located dots on each captured image. The substrate type located under each of the dots was then identified to the most descriptive level possible and entered into a database. Most stony corals and macroalgae were identified to species. Areas of diseased coral that fell under the random dots were classified as diseased coral (DCOR), regardless of the coral species. For all the sites except Cane Bay and Long Reef/Eagle Ray, corals within the *Montastraea annularis* complex (*M. annularis*, *M. faveolata*, and *M. franksii*) were classified to species. These corals were classified as *Montastraea annularis* for the Cane Bay and Long Reef/Eagle Ray sites. For analysis purposes, all these species were classified in a *Montastraea annularis* complex category (MACX) and treated as one species. Sponges and gorgonians were categorized into groups based on morphotype for all sites except Cane Bay and Long Reef/Eagle Ray, where they were classified simply as gorgonian or sponge. For future sampling of all sites, gorgonians and sponges will be classified to morphotype and all corals in the *M. annularis* complex will be classified to species. Non-living substrate types were classified as sand, rubble, or pavement. For each transect, the percent cover of each substrate identification category was calculated by dividing the number of random dots falling on that substrate type divided by the total number of dots for that transect. Mean values for percent cover of each category were calculated and coral diversity was measured by using the Shannon-Weaver diversity index for each site. For all sites except for Cane Bay and Long Reef/Eagle Ray, images in which random dots fell in shadows or on areas that were not the substrate (i.e. the measuring tape and guide wand) were compared to the original tape to attempt to identify the substrate type located under the obstruction. Overall, 2.4% of the dots could not be positively identified due to obstruction by sampling equipment or shadows. These data were excluded from analysis. Due to limitations of the video method (see Appendix I), positive identification of the substrate beneath the random dots was not always possible. In instances where it was not clear whether a dot fell on macroalgae or dead coral with turf algae, the dead coral with turf algae category was used. Nearly 1% of the randomly dotted substrate types could not be positively identified to kingdom or a specific non-

living substrate type. These were classified as “unknown” and included in total dot counts. Marcia Taylor videotaped transects at Lang Bank, Jacks Bay, Salt River East Wall, Salt River West Wall, and Sprat Hole and analyzed the data for Long Reef/Eagle Ray. Paige Rothenburger videotaped transects at Buck Island and analyzed the data for the Cane Bay site. Steve Herzlieb analyzed the data for Buck Island, Jacks Bay, Salt River East Wall, Salt River West Wall, and Sprat Hole.

Fish transects were conducted at all sites except Buck Island. Divers from Virgin Islands Division of Fish and Wildlife and the University of the Virgin Islands conducted fish counts at Lang Bank, Jacks/Issacs Bay and Sprat Hole whereas divers from the Reef Environmental Education Foundation conducted dives at Cane Bay, Salt River and Long Reef. Six 30 x 2 m transects were placed in the vicinity of the coral video transects. A diver swam slowly recording all species present at all sites except Cane Bay, Salt River and Long Reef. These latter sites were part of another study (Atlantic and Gulf Rapid Reef Assessment) which used the same methodology but only counted commercially or ecologically important species within the following fish families (Angelfish, Butterflyfish, Groupers, Grunts, Parrotfish, Snappers, Surgeonfish, and Triggerfish).

III. Results and Discussion:

The percent cover of living coral ranged from 5.0% at Lang Bank to 24.5% at Sprat Hole (Figure 2A). No correlations between percent coral cover and turf algae or coral cover and macroalgae were found ($r^2 = 0.18$, $r^2 < 0.001$, respectively). Coral species composition was similar between sites, with ten species comprising the majority of living corals at all sites (Figure 3). Corals in the genus *Montastraea* had the highest abundance at all sites, except for Lang Bank where *Diploria strigosa* was most abundant (Figure 4). Coral diversity ranged from a Shannon-Weaver diversity index (H') of 0.88 at Sprat Hole to 2.17 at Lang Bank (Figure 5). The most dominant substrate type at all eight sites was dead coral covered with turf algae, ranging from 31.8% at Buck Island to 82.5% at Lang Bank (Figure 2B). This category includes both long dead and recently killed coral covered with a layer of turf algae. Percent cover of macroalgae ranged from 0.5% at Long Reef/Eagle Ray to 33.4% for Jack's Bay (Figure 2C). Since dots were classified as dead coral with turf algae in instances when it was unclear whether the dots fell on macroalgae or turf algae, it is possible that these data may over-represent turf algal cover and under-represent macroalgal cover. A strong negative correlation ($P < 0.001$) was found between percent cover macroalgae and percent cover turf algae (Figure 6). Sponges and gorgonians each comprised less than 10% of the benthic cover at all sites (Figure 7A, B). Sand was the only non-living substrate type found at the sites, ranging from 0.1% at Jacks Bay and Salt River West Wall to 14.5% at Buck Island (Figure 7C). Detailed summaries of the video data from each site are included in Appendix II: Summary of Coral Video Data and Appendix III: Summary of Non-coral Video data. The morphotype categories used for sponges are tentative, pending evaluation of the accuracy of this type of classification from a two-dimensional video image. Specifically, difficulties exist differentiating between boring and encrusting sponges. During the diver surveys, no *D. antillarum* sea urchins were observed on any of the transects. Bleaching and disease data for Cane Bay are not available at this time. Bleaching occurred at all

other sites except for Buck Island. Bleached colonies of *Siderastrea siderea* and *Montastraea annularis* were observed at five sites, *Agaracia agaricites* and *Diploria strigosa* at three sites, *Porites astreoides*, and *Dichocenia stokesii* at two sites, and *M. cavernosa* and *Meandrina meandrites* at one site. Diseased colonies of *S. siderea* were observed at three sites, *M. annularis* at two sites, and *P. porites* at one site. Less than 0.03% of the random dots fell on areas of diseased coral in the video images.

Herbivorous fishes (surgeonfish, parrotfish) dominated the fish fauna in St. Croix (Figure 8). This is similar to what was reported by Tobias (1997) for the fishery around the Virgin Islands. The herbivorous fish families dominated nearly all sites. Jacks/Issacs Bay had the lowest density of reef fish with three fish families totally absent. Although groupers were consistently present at all sites (Figures 8, 9), they were dominated by the smaller species of groupers such as coney (*Epinephelus fulvus*), graysby (*E. cruentatus*), and red hind (*E. guttatus*). Grunts (especially French grunts, *Haemulid flavolineatum*) were particularly common in Cane Bay whereas the trigger fish (especially black durgon, *Melichthys niger*) were very common in Lang Bank (Figures 9 a,b). Of the six sites that were surveyed, the three north shore sites (Cane Bay, Salt River, Lang Bank) had the highest densities of reef fish (Figure 10).

Literature Cited

- Garrison, G. 1999. The scientific background of the Virgin Islands National Park Completion Project. A report for the National Park Service and Office of the Secretary of the Interior. pp. 26.
- Tobias, W. (1997) Three year summary report of the Virgin Islands fishery- April 1994 to March 1997. Cooperative Fishery Statistics Program #SF-42(NA27FT0301-01). 40 p.

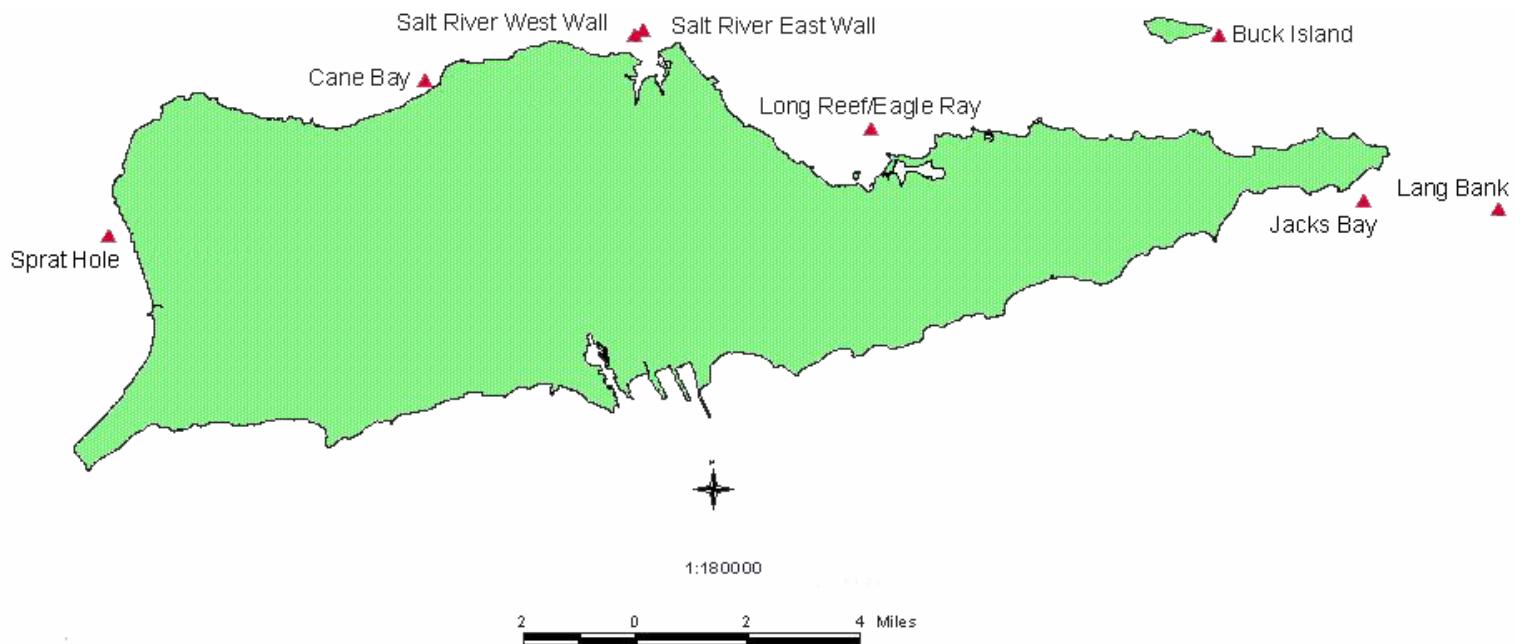


Fig. 1 Locations of video monitoring sites in St. Croix, USVI. Long Reef/Eagle Ray, Buck Island, Lang Bank, and Jacks Bay are located within the proposed marine park boundaries.

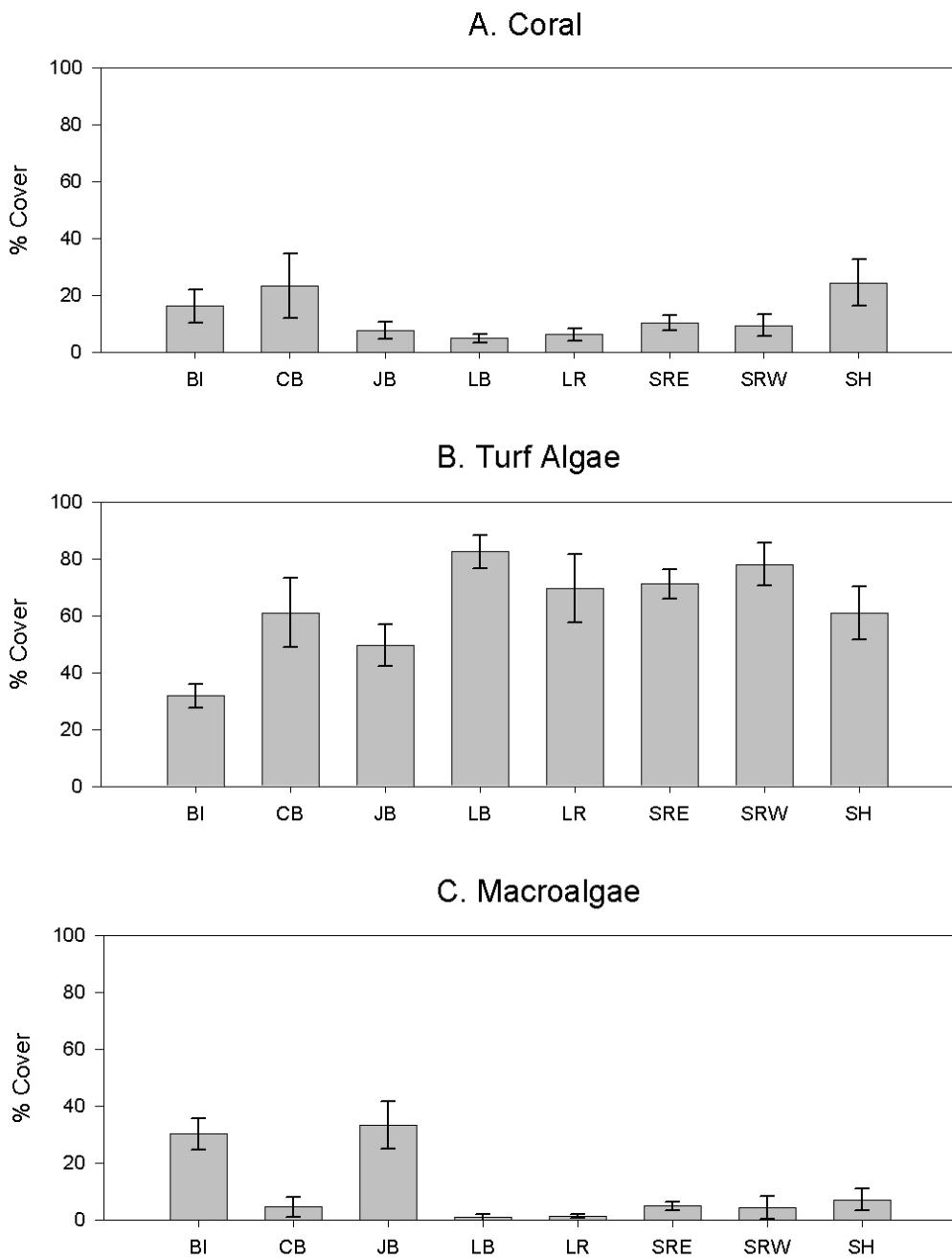


Fig. 2 Mean percent cover of A.) scleractinian corals, B.) turf algae and C.) macroalgae at eight monitored sites:
 BI Buck Island; CB Cane Bay; JB Jacks Bay; LB Lang Bank; LR Long Reef/Eagle Ray;
 SRE Salt River East Wall; SRW Salt River West Wall; SH Sprat Hole.
 For BI, $n = 3$ transects. All other sites, $n = 6$ transects. Error bars represent standard deviation.

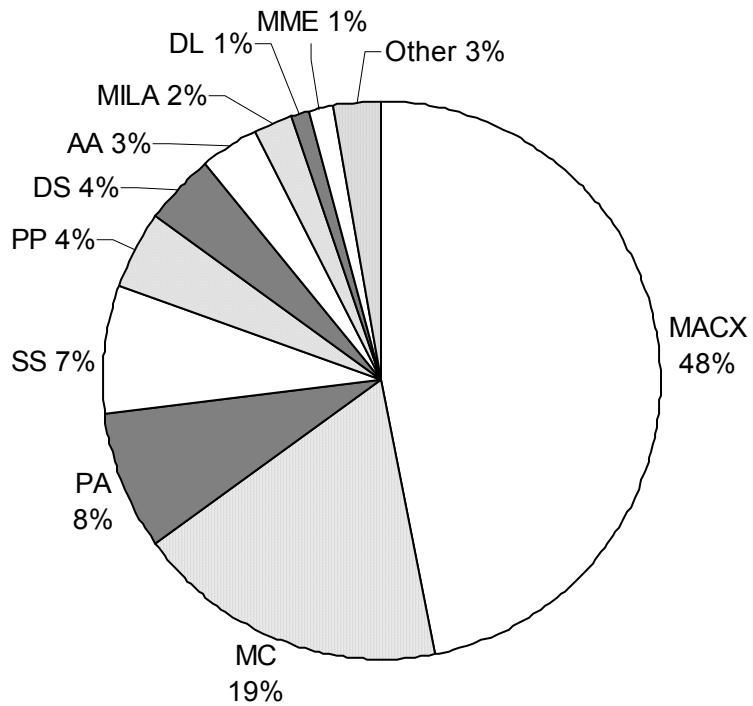
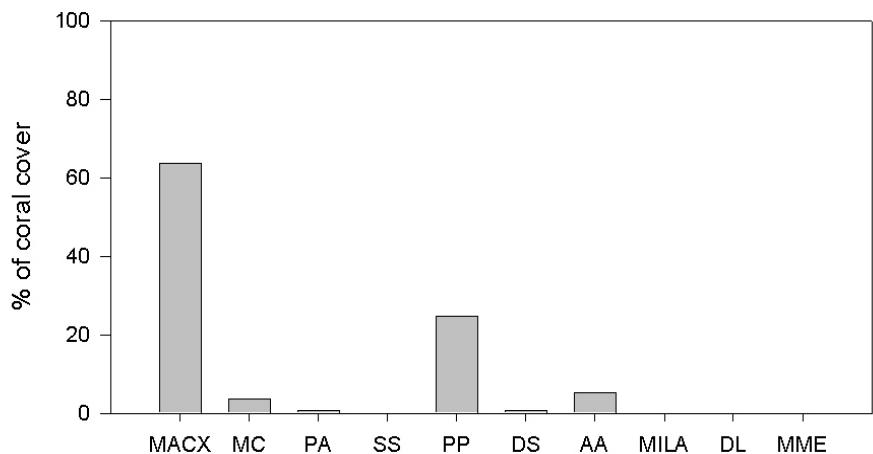


Fig. 3 Percentage of coral cover of the most common coral species at all sampled sites in St. Croix, USVI. Percentage calculated by dividing the number of random dots falling on each species divided by the number of dots on all corals in images from all sites. MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; PP *P. porites*; DS *Diploria strigosa*; AA *Agaricia agaricites*; MILA *Millepora alcicornis*; DL *D. labyrinthiformes*; MME *Meandrina meandrites*. Other denotes percent of all other coral species combined.

A. Buck Island



B. Cane Bay

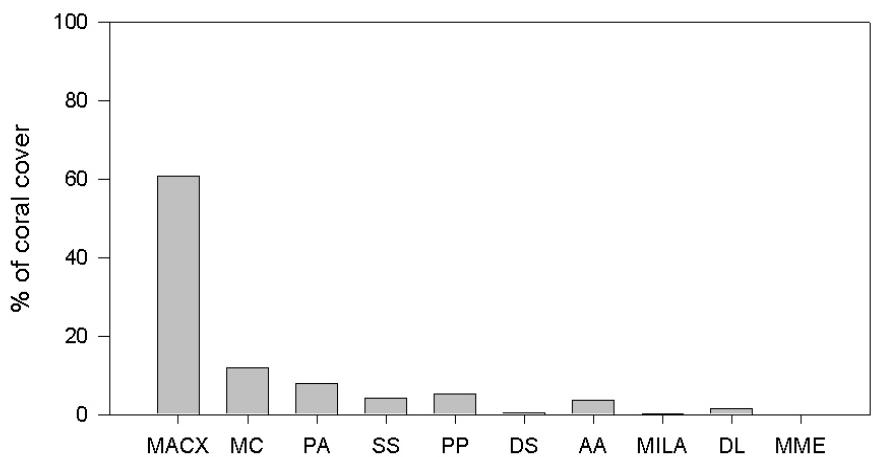
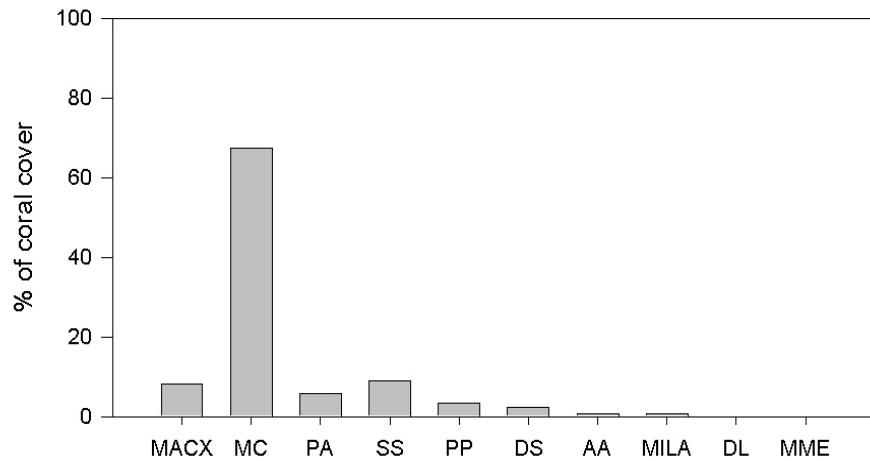


Fig. 4A, B Percent of coral cover of the most common coral species at A.) Buck Island and B.) Cane Bay. Percent calculated by dividing the number of random dots falling on each species by the number of dots on all corals in images for each site. MACX *Montastraea annularis* complex; MC *M. cavernosa*; PA *Porites astreoides*; SS *Siderastrea siderea*; PP *P. porites*; DS *Diploria strigosa*; AA *Agaricia agaricites*; MILA *Millepora alcicornis*; DL *D. labyrinthiformes*; MME *Meandrina meandrites*

C. Jacks Bay



D. Lang Bank

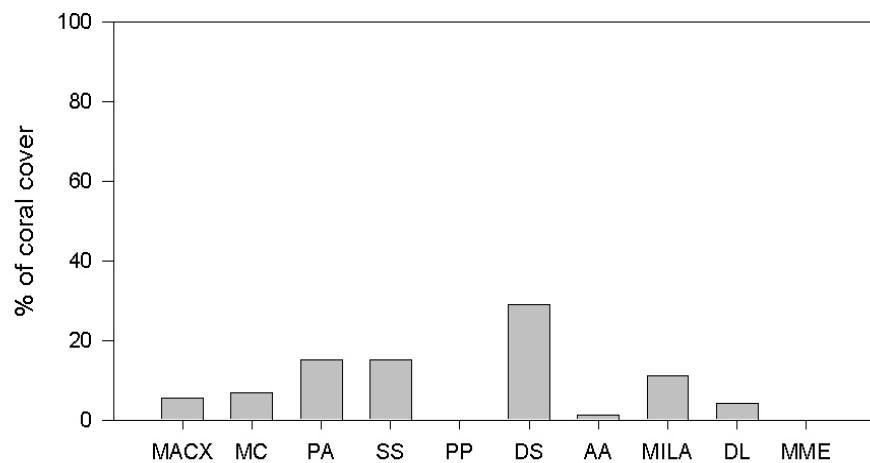
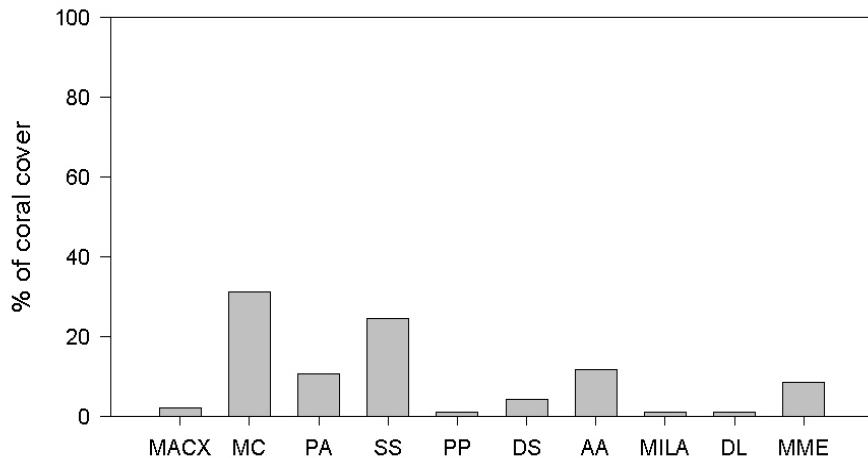


Fig. 4C, D Percent of coral cover of the most common coral species at A.) Jacks Bay and B.) Lang Bank.
See figure 4A for species codes.

E. Long Reef/Eagle Ray



F. Salt River East Wall

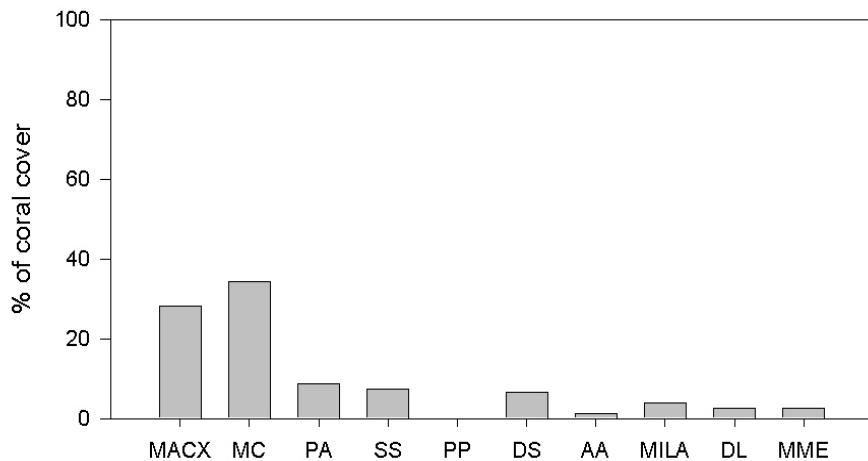
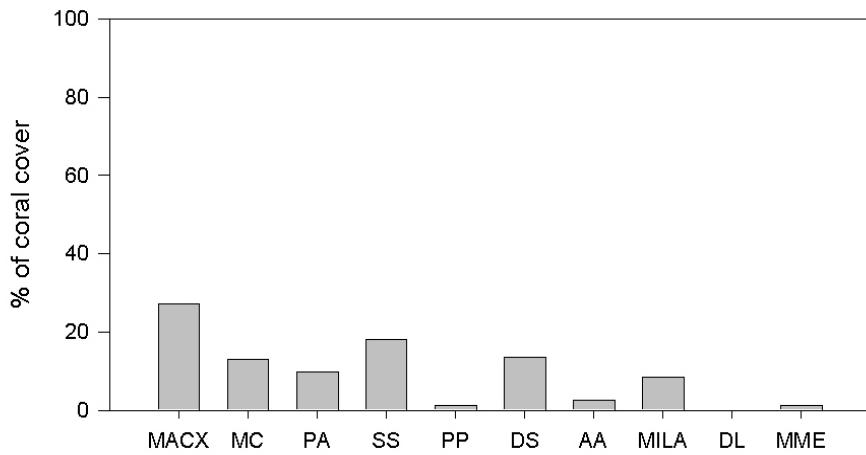


Fig. 4E, F Percent of coral cover of the most common coral species at E.) Long/Reef Eagle Ray and F.) Salt River East Wall. See Figure 4A for species codes.

F. Salt River West Wall



G. Sprat Hole

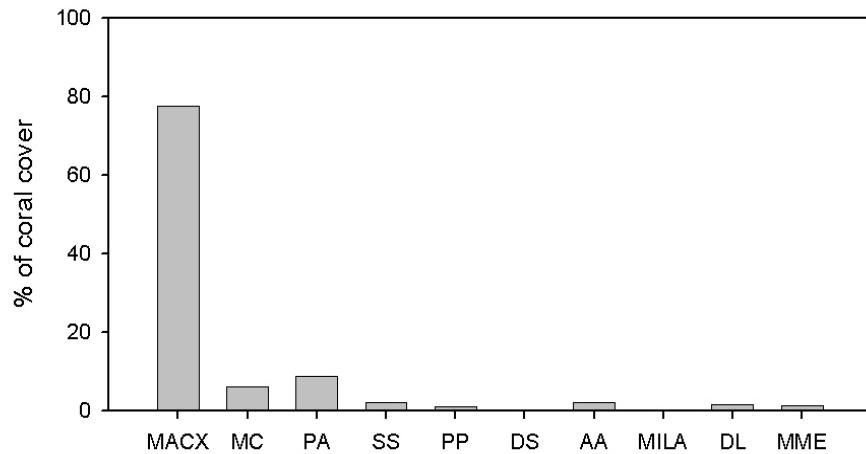


Fig. 4G, H Percent of coral cover of the most common coral species at A.) Salt River West Wall and B.) Sprat Hole. See Figure 4A for species codes.

Coral Diversity

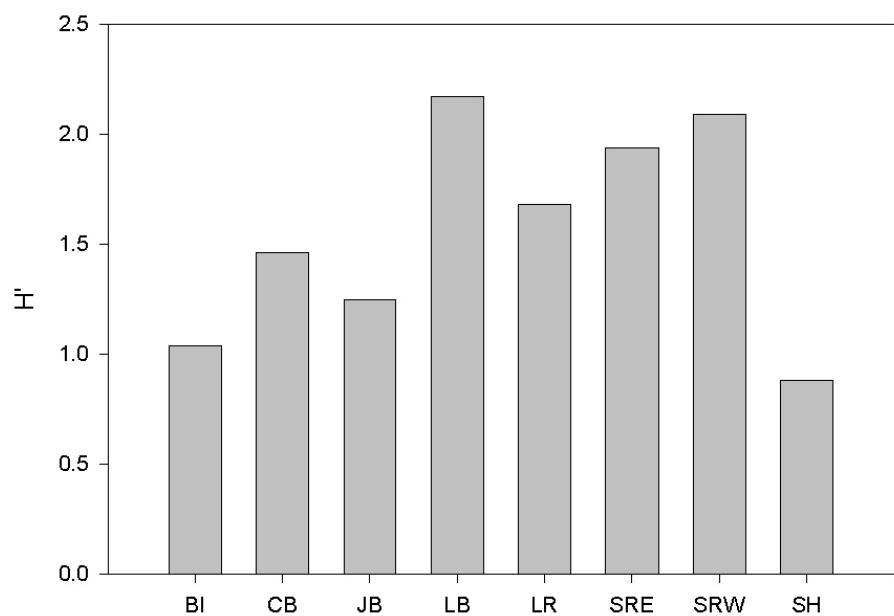


Fig. 5 Shannon Weaver Diversity Index (H') for corals at eight monitored sites:
BI Buck Island; CB Cane Bay; JB Jacks Bay; LB Lang Bank; LR Long Reef/Eagle Ray
SRE Salt River East Wall; SRW Salt River West Wall; SH Sprat Hole

% Cover Macroalgae vs. % Cover Dead Coral with Turf Algae

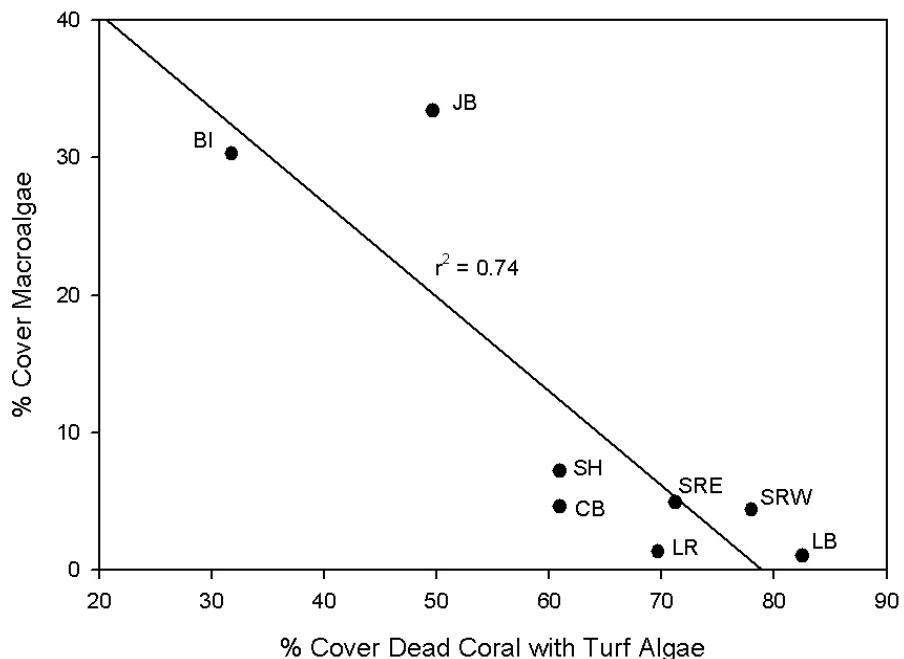
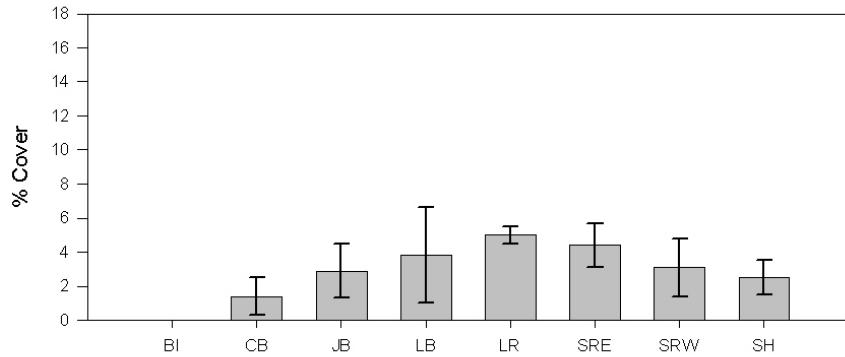
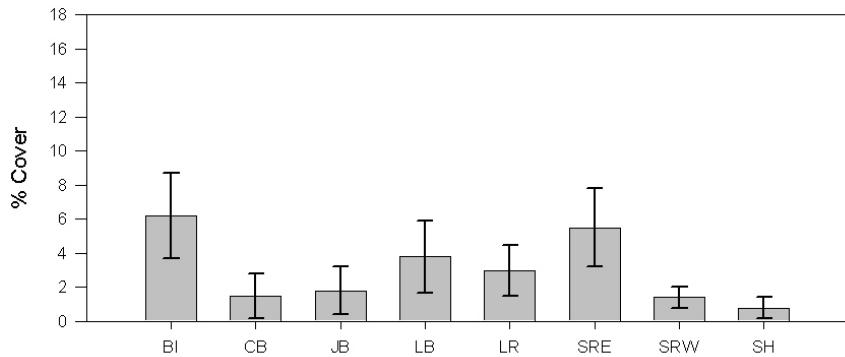


Fig. 6 Percent cover of macroalgae vs. percent cover of dead coral with turf algae.
BI Buck Island; CB Cane Bay; JB Jacks Bay; LB Lang Bank; LR Long Reef/Eagle Ray;
SRE Salt River East Wall; SRW Salt River West Wall; SH Sprat Hole
($F_{1,14} = 49.6$, $P < 0.001$)

A. Sponges



B. Gorgonians



C. Sand

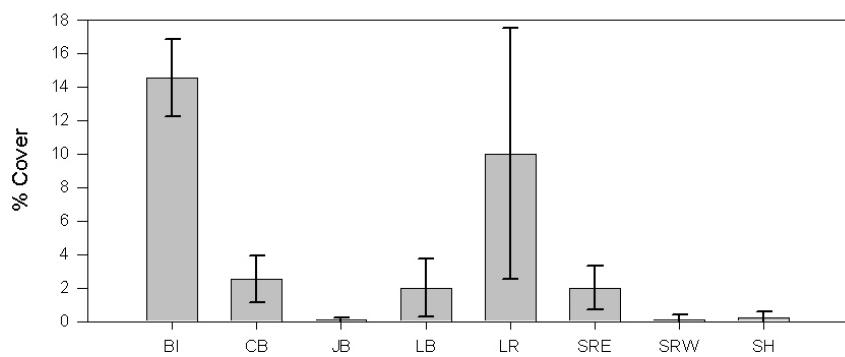


Fig. 7 Mean percent cover of A.) sponges, B.) gorgonians and C.) sand at eight monitored sites:
BI Buck Island; CB Cane Bay; JB Jacks Bay; LB Lang Bank; Long Reef/Eagle Ray;
SRE Salt River East Wall; SRW Salt River West Wall; SH Sprat Hole. For BI, $n = 3$ transects.
All other sites, $n = 6$ transects. Error bars represent standard deviation.

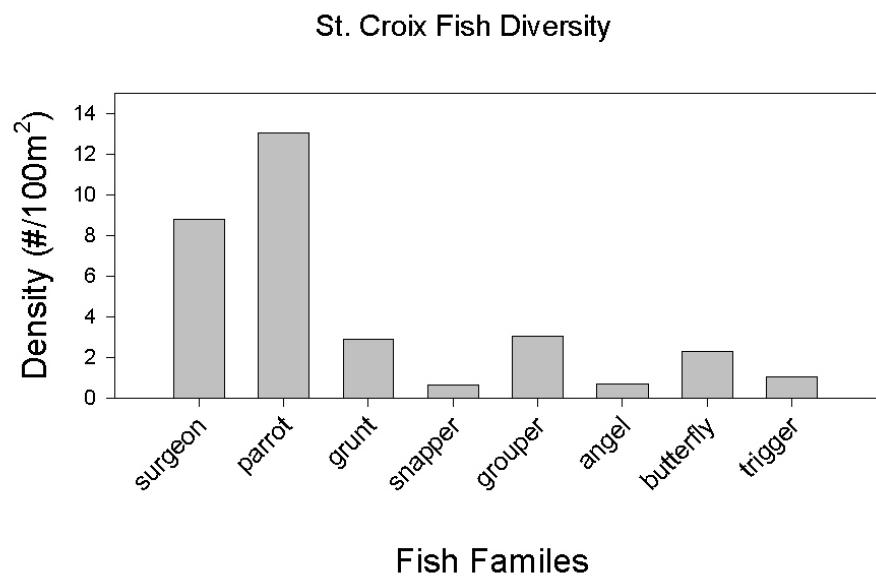


Fig. 8 Density (#/100m²) of eight commercially or ecologically important marine fish families on St. Croix. Figure includes data from 6 sites (Cane Bay, Salt River, Sprat Hole, Lang Bank, Jacks/Isaacs Bay, and Long Reef).

Density of 8 fish families

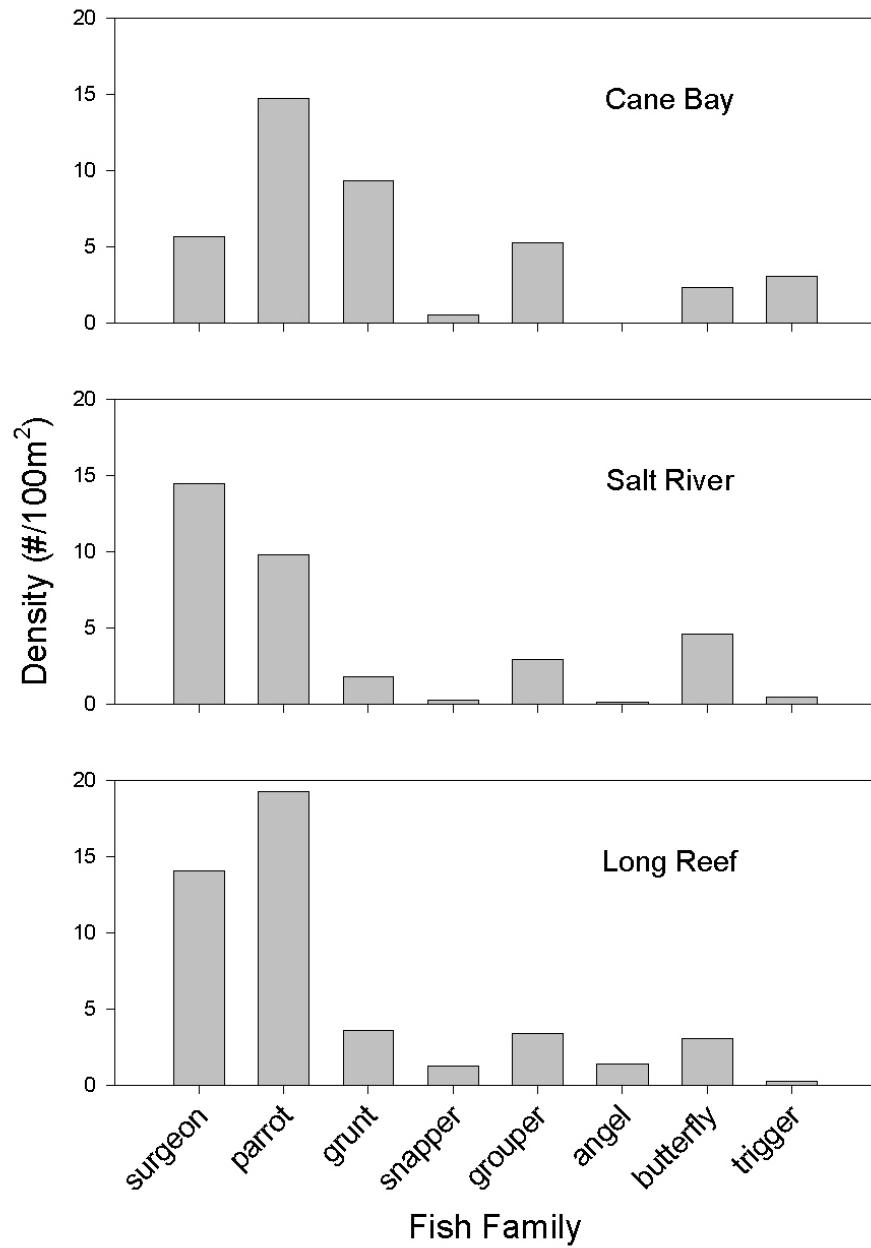


Fig. 9a Density (#/100m²) of eight commercially or ecologically important marine fish families at Cane Bay, Salt River, and Long Reef, St. Croix.

Density of 8 fish families

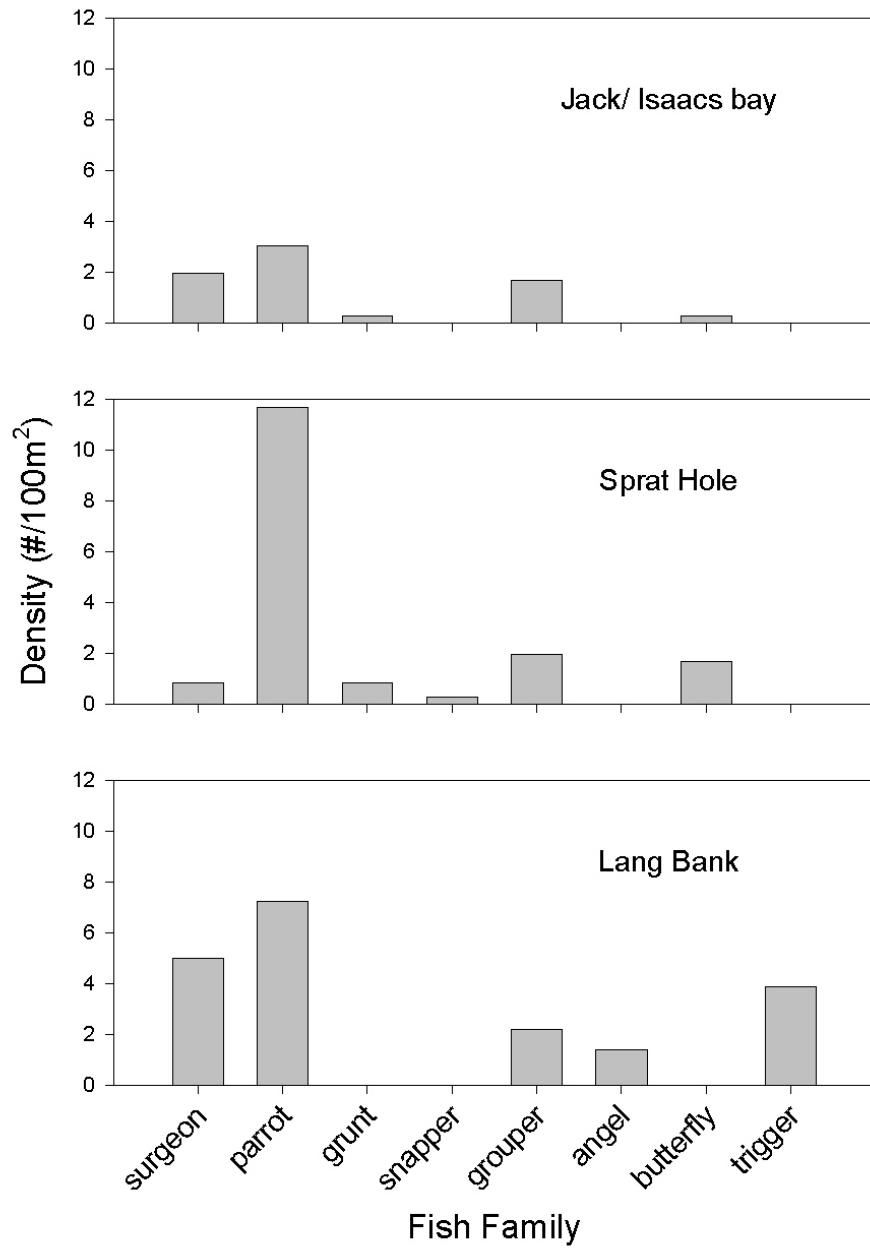


Fig. 9b Density (#/100m²) of eight commercially or ecologically important marine fish families at Jacks/Isaacs Bay, Sprat Hole, and Lang Bank, St. Croix.

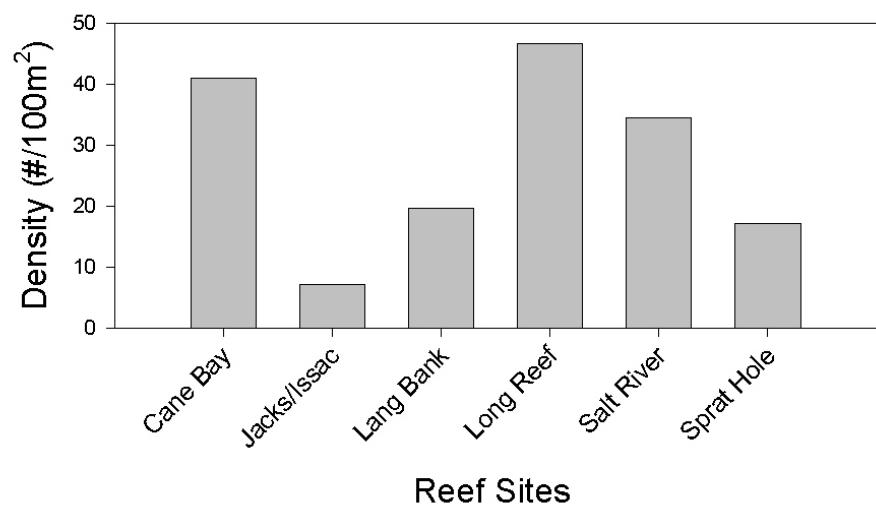


Fig. 10 Total fish density (#/100m²) at 6 sites on St. Croix, USVI.

Appendix I: Rationale for Using the Video Method

Excerpt from USGS Digital Video Coral Reef Monitoring Protocol Website
www.fcsc.usgs.gov/Coral_Reef_Ecology/Coral_Monitoring_Kit/coral_monitoring_kit.html

Rationale for using the video method

We decided to use an underwater video method as our primary technique for monitoring of reefs because it offers several advantages over alternative methods. Videotapes are especially effective in recording the effects of a variety of stresses that cause conspicuous changes in the appearance of coral colonies---for example, the physical breakage from hurricanes and boat anchors, and the bright white patches from coral diseases and bleaching. They can also show recovery of reefs following damage.

Other, non-photographic techniques for monitoring reefs require more time in the water, and therefore, are constrained by depth and time limits for scuba diving. They also depend on the diver's ability to identify a high diversity of organisms in the field. However, an experienced diver who lacks training in identification of reef species can collect data with the video method.

Because scuba diving imposes depth and time constraints, most reef monitoring studies have been based on very small areas. Use of video cameras provides the opportunity to efficiently collect larger amounts of certain types of data, giving increased return for the time spent underwater (see Carleton and Done 1995). For example, it takes less than 15 minutes to record a video transect 20 m long but sometimes over 4 hours to collect information along the same transect using the linear chain transect method. Although the chain transect method provides data on the 3-dimensionality of the reef surface and on organisms which are not visible from a vantage point directly above the reef (the "planar" view recorded with video), it is not suitable for collecting data over a large spatial scale. The video method requires a skilled diver but no expertise in identification of reef organisms in the field, the basis of the chain transect method. In other words, non-scientists can use this method. The video method can provide a substantial amount of useful information while minimizing a diver's time in the water, and unlike most other methods, provides an archivable, visual record of the reef. Video transect images can be stored on write-to CD. Archived images can be sent to other researchers electronically, and the same image and pixels can be identified for quality control.

We have compared this video method to the more-widely used chain transect method and believe that it is more suitable for use in long-term monitoring programs in national parks (see also Rogers and Miller, in press, for a comparison of the results of using both methods to document cover, bleaching and storm damage on a reef in St. John, USVI).

Disadvantages of the video method

In spite of its numerous advantages, the video method has its limitations. In some cases, the chain transect method will be more appropriate. With the chain method, identifications are made on site, in the field. The identification of benthic components from videotapes may be difficult because at times only portions of these components are included within the frame that is being analyzed, and therefore the “context” is missing. In addition, changes in the amount of living coral recorded with still photography or video are changes in the amount of living coral tissue visible in planar (2-dimensional) view. This technique will under-represent colonies with a more vertical morphology (e.g., pillar coral) and is more suitable for monitoring reef zones with species exhibiting encrusting and hemispherical morphologies. The video method is not appropriate for monitoring recruitment of hard corals because resolution is not adequate to provide images of recruits less than about 4 cm in diameter. Also, sometimes it is difficult to differentiate macroscopic algae (“macroalgae”) from algal “turf” species because of the planar perspective. In areas with high sedimentation rates, sediment particles may obscure the underlying algae resulting in underestimates of the algal cover. These are important considerations given that increases in macroalgae are considered one of the clearest indications of severe stress to reefs. Image analysis takes a considerable amount of experience, expertise, and time (an estimated two or more hours per 20 m transect) whereas chain transect data can be processed relatively quickly. The chain method may be more appropriate for quantifying storm damage because it provides a measure of the topographical relief of the site. The video method is more appropriate if the interest is in documenting visible changes such as bleaching or coral diseases.

Appendix II:

Summary of coral video data

Mean Percent Coral Cover for all Sites

Categories	Buck Island	Cane Bay	Jacks Bay	Lang Bank	Long Reef/ Eagle Ray	Salt River/ East Wall	Salt River/ West Wall	Sprat Hole
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.77	0.83	0.06	0.05	0.71	0.15	0.25	0.52
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humiliis (AH) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Agaricia lamarckii (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.19	0.00	0.00	0.00	0.19	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.39	0.00	0.16	0.06	0.28	0.00	0.32
Diploria strigosa (DS) - coral	0.11	0.13	0.18	1.32	0.27	0.68	1.20	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00
Eusimilia fastigiata (EF) - coral	0.21	0.00	0.06	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllum sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopphyllastrea rigida (IR) - coral	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00	0.52	0.27	0.11	0.30
Montastraea annularis (MA) - coral	3.90	13.91	0.00	0.00	0.12	0.07	0.00	12.82
Montastraea annularis complex (MACX) - coral	0.33	NA	0.23	0.22	NA	0.87	0.50	1.85
Montastraea cavernosa (MC) - coral	0.67	2.72	4.86	0.29	1.92	3.53	1.19	1.40
Montastraea faveolata (MFAV) - coral	0.11	NA	0.34	0.00	NA	1.23	1.47	2.02
Montastraea franksi (MFRA) - coral	5.78	NA	0.00	0.00	NA	0.71	0.40	2.11
Montastraea species (MSPP) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.11	1.85	0.41	0.70	0.66	0.93	0.88	2.11
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.13	0.00	0.00	0.00	0.15	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00
Porites porites (PP) - coral	4.18	1.21	0.24	0.00	0.07	0.00	0.11	0.20
Porites branching species (PBSP) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.06	0.14	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.98	0.65	0.70	1.52	0.71	1.68	0.50
Siderastrea species (SSPP) - coral	0.00	NA	0.00	0.00	NA	0.07	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.06	0.23	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.06	0.00	0.00	0.22	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.06	0.06	0.48	0.07	0.41	0.79	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.16	0.00	0.00	0.06	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.45	0.59	0.48	0.08	0.07	0.48	0.35

Buck Island	Percent Cover by Transect			
Categories	T1	T2	T3	mean % cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	2.32	0.00	0.00	0.77
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00
Agaricia lamarckii (AL) - coral	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	0.33	0.00	0.00	0.11
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.63	0.00	0.21
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00
Isophyllum sinuosa (IS) - coral	0.00	0.00	0.00	0.00
Isopyhyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.00	0.00	0.00
Montastraea annularis (MA) - coral	5.30	0.00	6.40	3.90
Montastraea annularis complex (MACX) - coral	0.99	0.00	0.00	0.33
Montastraea cavernosa (MC) - coral	0.00	0.00	2.00	0.67
Montastraea faveolata (MFAV) - coral	0.00	0.32	0.00	0.11
Montastraea franksi (MFRA) - coral	1.32	10.41	5.60	5.78
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	0.00	0.32	0.00	0.11
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.99	3.15	8.40	4.18
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.00	0.00	0.00
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.00	0.00	0.00

Cane Bay	Percent Cover by Transect						
Categories	T1	T2	T3	T4	T5	T6	mean % cover
<i>Acropora cervicornis</i> (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora palmata</i> (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora prolifera</i> (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia agaricites</i> (AA) - coral	0.00	1.17	1.55	0.72	1.18	0.38	0.83
<i>Agaricia fragilis</i> (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia grahamiae</i> (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia humilis</i> (AH) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Agaricia lamarckii</i> (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia tenuifolia</i> (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia undata</i> (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia</i> species (AGSP) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Colpophyllia natans</i> (CN) - coral	0.00	0.39	0.78	0.00	0.00	0.00	0.19
<i>Dendrogyra cylindrus</i> (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria clivosa</i> (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria labyrinthiformis</i> (DL) - coral	0.00	2.34	0.00	0.00	0.00	0.00	0.39
<i>Diploria strigosa</i> (DS) - coral	0.00	0.00	0.39	0.00	0.00	0.38	0.13
<i>Dichocoenia stokesii</i> (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eusmilia fastigiata</i> (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Favia fragum</i> (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isophyllia sinuosa</i> (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isopyphyllastrea rigida</i> (IR) - coral	0.00	0.00	0.39	0.00	0.00	0.00	0.06
<i>Leptoseris cucullata</i> (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Manicina areolata</i> (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis decactis</i> (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis formosa</i> (MAFO) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Madracis mirabilis</i> (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meandrina meandrites</i> (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea annularis</i> (MA) - coral	1.15	12.11	22.09	21.38	17.72	9.02	13.91
<i>Montastraea annularis</i> complex (MACX) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Montastraea cavernosa</i> (MC) - coral	1.53	5.86	2.71	5.07	0.00	1.13	2.72
<i>Montastraea faveolata</i> (MFAV) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Montastraea franksi</i> (MFRA) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Montastraea</i> species (MSPP) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Mussa angulosa</i> (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia aliciae</i> (MAL) - coral	0.00	0.00	0.39	0.00	0.00	0.00	0.06
<i>Mycetophyllia danaana</i> (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia lamarckiana</i> (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia ferox</i> (MF) - coral	0.00	0.00	0.00	1.45	0.00	0.38	0.30
<i>Mycetophyllia</i> species (MYSP) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Oculina diffusa</i> (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites astreoides</i> (PA) - coral	2.30	2.73	2.33	1.45	0.39	1.88	1.85
<i>Porites branneri</i> (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites divaricata</i> (PD) - coral	0.00	0.00	0.78	0.00	0.00	0.00	0.13
<i>Porites furcata</i> (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites porites</i> (PP) - coral	0.00	1.56	3.10	0.36	0.00	2.26	1.21
<i>Porites branching</i> species (PBSP) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Scolymia cubensis</i> (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia lacera</i> (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia</i> species (SCSP) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Siderastrea radians</i> (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Siderastrea siderea</i> (SS) - coral	0.00	0.00	1.94	0.00	3.54	0.38	0.98
<i>Siderastrea</i> species (SSPP) - coral	NA	NA	NA	NA	NA	NA	NA
<i>Solenastrea bournoni</i> (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Solenastrea hyades</i> (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stephanocoenia michelinii</i> (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.38	0.06
<i>Tubastraea aurea</i> (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora alcicornis</i> (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.38	0.06
<i>Millepora complanata</i> (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora squarrosa</i> (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.78	0.78	0.36	0.39	0.38	0.45

Jacks Bay		Percent Cover by Transect						
Categories		T1	T2	T3	T4	T5	T6	mean % cover
<i>Acropora cervicornis</i> (AC) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora palmata</i> (AP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora prolifera</i> (APR) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia agaricites</i> (AA) - coral		0.00	0.00	0.00	0.00	0.35	0.00	0.06
<i>Agaricia fragilis</i> (AF) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia grahamae</i> (AG) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia humilis</i> (AH) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia lamarckii</i> (AL) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia tenuifolia</i> (AT) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia undata</i> (AU) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia</i> species (AGSP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Colpophyllia natans</i> (CN) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dendrogyra cylindrus</i> (DCY) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria clivosa</i> (DC) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria labyrinthiformis</i> (DL) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria strigosa</i> (DS) - coral		0.00	0.00	0.00	0.00	1.06	0.00	0.18
<i>Dichocoenia stokesii</i> (DSO) - coral		0.00	0.00	0.35	0.00	0.00	0.00	0.06
<i>Eusmilia fastigiata</i> (EF) - coral		0.00	0.00	0.00	0.00	0.00	0.36	0.06
<i>Favia fragum</i> (FF) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isophyllia sinuosa</i> (IS) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isopyphyllastrea rigida</i> (IR) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Leptoseris cucullata</i> (LC) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Manicina areolata</i> (MAR) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis decactis</i> (MD) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis formosa</i> (MAFO) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis mirabilis</i> (MM) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meandrina meandrites</i> (MME) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea annularis</i> (MA) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea annularis complex</i> (MACX) - coral		0.34	0.00	0.35	0.69	0.00	0.00	0.23
<i>Montastraea cavernosa</i> (MC) - coral		5.44	3.35	8.04	6.94	2.83	2.54	4.86
<i>Montastraea faveolata</i> (MFAV) - coral		2.04	0.00	0.00	0.00	0.00	0.00	0.34
<i>Montastraea franksi</i> (MFRA) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea</i> species (MSPP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mussa angulosa</i> (MAN) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia aliciae</i> (MAL) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia danaana</i> (MDA) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia lamarckiana</i> (ML) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia ferox</i> (MF) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia</i> species (MYSP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oculina diffusa</i> (OD) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites astreoides</i> (PA) - coral		0.00	0.00	1.40	0.00	0.00	1.09	0.41
<i>Porites branneri</i> (PB) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites divaricata</i> (PD) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites furcata</i> (PF) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites porites</i> (PP) - coral		0.00	0.00	1.05	0.00	0.00	0.36	0.24
<i>Porites branching</i> species (PBSP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia cubensis</i> (SC) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia lacera</i> (SL) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia</i> species (SCSP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Siderastrea radians</i> (SR) - coral		0.00	0.00	0.00	0.00	0.35	0.00	0.06
<i>Siderastrea siderea</i> (SS) - coral		0.68	1.49	0.00	1.39	0.00	0.36	0.65
<i>Siderastrea</i> species (SSPP) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Solenastrea bournoni</i> (SB) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Solenastrea hyades</i> (SH) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stephanocoenia michelinii</i> (SM) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tubastraea aurea</i> (TA) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora alcicornis</i> (MILA) - coral		0.00	0.37	0.00	0.00	0.00	0.00	0.06
<i>Millepora complanata</i> (MILC) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora squarrosa</i> (MILS) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral		0.00	0.74	0.00	2.43	0.00	0.36	0.59

Lang Bank	Percent Cover by Transect						
Categories	T1	T2	T3	T4	T5	T6	mean % cover
<i>Acropora cervicornis</i> (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora palmata</i> (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora prolifera</i> (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia agaricites</i> (AA) - coral	0.00	0.00	0.00	0.00	0.32	0.00	0.05
<i>Agaricia fragilis</i> (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia grahamiae</i> (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia humilis</i> (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia lamarckii</i> (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia tenuifolia</i> (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia undata</i> (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia</i> species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Colpophyllia natans</i> (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dendrogyra cylindrus</i> (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria clivosa</i> (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria labyrinthiformis</i> (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.98	0.16
<i>Diploria strigosa</i> (DS) - coral	2.08	2.61	0.00	1.26	0.32	1.64	1.32
<i>Dichocoenia stokesii</i> (DSO) - coral	0.35	0.00	0.00	0.00	0.00	0.00	0.06
<i>Eusmilia fastigiata</i> (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Favia fragum</i> (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isophyllia sinuosa</i> (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isopyphyllastrea rigida</i> (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Leptoseris cucullata</i> (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Manicina areolata</i> (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis decactis</i> (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis formosa</i> (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis mirabilis</i> (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meandrina meandrites</i> (MME) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea annularis</i> (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea annularis complex</i> (MACX) - coral	0.69	0.00	0.00	0.00	0.65	0.00	0.22
<i>Montastraea cavernosa</i> (MC) - coral	0.00	0.00	0.75	0.00	0.97	0.00	0.29
<i>Montastraea faveolata</i> (MFAV) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea franksi</i> (MFRA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Montastraea</i> species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mussa angulosa</i> (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia aliciae</i> (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia danaana</i> (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia lamarckiana</i> (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia ferox</i> (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia</i> species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Oculina diffusa</i> (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites astreoides</i> (PA) - coral	0.35	0.00	0.37	2.51	0.00	0.98	0.70
<i>Porites branneri</i> (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites divaricata</i> (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites furcata</i> (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites porites</i> (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites branching species</i> (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia cubensis</i> (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia lacera</i> (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia</i> species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Siderastrea radians</i> (SR) - coral	0.00	0.00	0.00	0.84	0.00	0.00	0.14
<i>Siderastrea siderea</i> (SS) - coral	0.00	0.87	1.12	1.26	0.32	0.66	0.70
<i>Siderastrea</i> species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Solenastrea bournoni</i> (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Solenastrea hyades</i> (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stephanocoenia michelinii</i> (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Tubastraea aurea</i> (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora alcicornis</i> (MILA) - coral	0.69	0.00	1.12	0.42	0.32	0.33	0.48
<i>Millepora complanata</i> (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.98	0.16
<i>Millepora squarrosa</i> (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.66	0.11
Coral juvenile (CORJU) - coral	0.00	0.43	0.00	0.00	0.00	0.00	0.07
Hard Coral, unknown spp. (CORAL) - coral	0.35	0.00	1.12	0.42	0.32	0.66	0.48

Long Reef/ Eagle Ray

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
<i>Acropora cervicornis</i> (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora palmata</i> (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Acropora prolifera</i> (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia agaricites</i> (AA) - coral	0.00	1.22	1.15	0.74	0.00	1.13	0.71
<i>Agaricia fragilis</i> (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia grahamiae</i> (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia humilis</i> (AH) - coral	NA						
<i>Agaricia lamarckii</i> (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia tenuifolia</i> (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia undata</i> (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Agaricia</i> species (AGSP) - coral	NA						
<i>Colpophyllia natans</i> (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Dendrogyra cylindrus</i> (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria clivosa</i> (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Diploria labyrinthiformis</i> (DL) - coral	0.00	0.00	0.38	0.00	0.00	0.00	0.06
<i>Diploria strigosa</i> (DS) - coral	0.48	0.41	0.00	0.74	0.00	0.00	0.27
<i>Dichocoenia stokesii</i> (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Eusmilia fastigiata</i> (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Favia fragum</i> (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isophyllum sinuosa</i> (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Isopyhyllastrea rigida</i> (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Leptoseris cucullata</i> (LC) - coral	NA						
<i>Manicina areolata</i> (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis decactis</i> (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Madracis formosa</i> (MAFO) - coral	NA						
<i>Madracis mirabilis</i> (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Meandrina meandrites</i> (MME) - coral	0.48	0.00	0.38	0.37	0.00	1.89	0.52
<i>Montastraea annularis</i> (MA) - coral	0.00	0.00	0.00	0.74	0.00	0.00	0.12
<i>Montastraea annularis</i> complex (MACX) - coral	NA						
<i>Montastraea cavernosa</i> (MC) - coral	2.39	2.03	1.92	1.11	1.41	2.64	1.92
<i>Montastraea faveolata</i> (MFAV) - coral	NA						
<i>Montastraea franksi</i> (MFRA) - coral	NA						
<i>Montastraea</i> species (MSPP) - coral	NA						
<i>Mussa angulosa</i> (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia aliciae</i> (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia danaana</i> (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia lamarckiana</i> (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia ferox</i> (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Mycetophyllia</i> species (MYSP) - coral	NA						
<i>Oculina diffusa</i> (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites astreoides</i> (PA) - coral	0.96	0.00	0.77	0.74	0.35	1.13	0.66
<i>Porites branneri</i> (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites divaricata</i> (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites furcata</i> (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Porites porites</i> (PP) - coral	0.00	0.41	0.00	0.00	0.00	0.00	0.07
<i>Porites branching</i> species (PBSP) - coral	NA						
<i>Scolymia cubensis</i> (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia lacera</i> (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Scolymia</i> species (SCSP) - coral	NA						
<i>Siderastrea radians</i> (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Siderastrea siderea</i> (SS) - coral	1.44	2.44	2.30	2.96	0.00	0.00	1.52
<i>Siderastrea</i> species (SSPP) - coral	NA						
<i>Solenastrea bournoni</i> (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Solenastrea hyades</i> (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stephanocoenia michelinii</i> (SM) - coral	0.96	0.00	0.00	0.37	0.00	0.00	0.22
<i>Tubastraea aurea</i> (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora alcicornis</i> (MILA) - coral	0.00	0.41	0.00	0.00	0.00	0.00	0.07
<i>Millepora complanata</i> (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Millepora squarrosa</i> (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.48	0.00	0.00	0.00	0.00	0.00	0.08

Salt River East Wall

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.00	0.00	0.00	0.00	0.89	0.00	0.15
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamiae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarckii (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	1.17	0.00	0.00	0.19
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.45	1.21	0.00	0.00	0.00	0.00	0.28
Diploria strigosa (DS) - coral	1.35	0.00	0.41	1.17	0.00	1.16	0.68
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopyphyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.40	1.22	0.00	0.00	0.00	0.27
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.45	0.00	0.07
Montastraea annularis complex (MACX) - coral	0.00	1.21	0.00	0.78	0.89	2.33	0.87
Montastraea cavernosa (MC) - coral	0.90	7.26	2.04	2.33	6.70	1.94	3.53
Montastraea faveolata (MFAV) - coral	0.45	0.00	5.31	1.17	0.45	0.00	1.23
Montastraea franksi (MFRA) - coral	2.25	0.40	0.00	0.00	0.45	1.16	0.71
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	1.35	0.00	0.41	0.39	2.68	0.78	0.93
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.89	0.00	0.15
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	0.00	0.00	0.00	0.78	0.00	3.49	0.71
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.45	0.00	0.07
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.39	0.06
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.45	1.21	0.41	0.00	0.00	0.39	0.41
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	0.00	0.40	0.00	0.00	0.00	0.00	0.07

Salt River West Wall

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	0.35	0.00	0.00	0.00	0.35	0.80	0.25
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamiae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarckii (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria strigosa (DS) - coral	2.43	1.35	1.96	0.36	0.70	0.40	1.20
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopphyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.00	0.34	0.33	0.00	0.00	0.00	0.11
Montastraea annularis (MA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Montastraea annularis complex (MACX) - coral	0.00	0.00	2.29	0.36	0.35	0.00	0.50
Montastraea cavernosa (MC) - coral	1.04	0.34	0.98	0.36	2.45	2.00	1.19
Montastraea faveolata (MFAV) - coral	0.00	0.00	4.25	0.72	3.85	0.00	1.47
Montastraea franksi (MFRA) - coral	0.69	1.69	0.00	0.00	0.00	0.00	0.40
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	2.78	0.68	0.33	0.00	0.70	0.80	0.88
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.80	0.13
Porites porites (PP) - coral	0.00	0.00	0.65	0.00	0.00	0.00	0.11
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	2.43	0.00	2.94	1.08	0.00	3.60	1.68
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.69	0.68	0.00	0.00	0.00	0.00	0.23
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.35	0.34	0.33	1.44	0.70	1.60	0.79
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.35	0.00	0.06
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	1.39	0.34	0.33	0.00	0.80	0.48	

Sprat Hole	Percent Cover by Transect						
Categories	T1	T2	T3	T4	T5	T6	mean % cover
Acropora cervicornis (AC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora palmata (AP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acropora prolifera (APR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia agaricites (AA) - coral	1.77	0.00	1.33	0.00	0.00	0.00	0.52
Agaricia fragilis (AF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia grahamae (AG) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia humilis (AH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia lamarckii (AL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia tenuifolia (AT) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia undata (AU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agaricia species (AGSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colpophyllia natans (CN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dendrogyra cylindrus (DCY) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria clivosa (DC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diploria labyrinthiformis (DL) - coral	0.00	1.21	0.00	0.00	0.00	0.72	0.32
Diploria strigosa (DS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dichocoenia stokesii (DSO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eusmilia fastigiata (EF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Favia fragum (FF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isophyllia sinuosa (IS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Isopphyllastrea rigida (IR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leptoseris cucullata (LC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manicina areolata (MAR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis decactis (MD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis formosa (MAFO) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madracis mirabilis (MM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meandrina meandrites (MME) - coral	0.88	0.00	0.00	0.92	0.00	0.00	0.30
Montastraea annularis (MA) - coral	12.39	7.26	6.64	9.17	31.36	10.07	12.82
Montastraea annularis complex (MACX) - coral	0.00	3.63	1.77	1.38	0.00	4.32	1.85
Montastraea cavernosa (MC) - coral	0.00	7.26	0.44	0.00	0.00	0.72	1.40
Montastraea faveolata (MFAV) - coral	7.08	2.82	2.21	0.00	0.00	0.00	2.02
Montastraea franksi (MFRA) - coral	2.65	0.00	0.00	0.46	2.73	6.83	2.11
Montastraea species (MSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mussa angulosa (MAN) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia aliciae (MAL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia danaana (MDA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia lamarckiana (ML) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia ferox (MF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mycetophyllia species (MYSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oculina diffusa (OD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites astreoides (PA) - coral	1.33	4.44	3.98	1.38	0.45	1.08	2.11
Porites branneri (PB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites divaricata (PD) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites furcata (PF) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porites porites (PP) - coral	0.00	1.21	0.00	0.00	0.00	0.00	0.20
Porites branching species (PBSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia cubensis (SC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia lacera (SL) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolymia species (SCSP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea radians (SR) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siderastrea siderea (SS) - coral	1.33	1.21	0.00	0.00	0.45	0.00	0.50
Siderastrea species (SSPP) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea bournoni (SB) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solenastrea hyades (SH) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stephanocoenia michelinii (SM) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubastraea aurea (TA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora alcicornis (MILA) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora complanata (MILC) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millepora squarrosa (MILS) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coral juvenile (CORJU) - coral	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hard Coral, unknown spp. (CORAL) - coral	1.33	0.00	0.44	0.00	0.00	0.36	0.35

Appendix III:

Summary of non-coral video data

Mean Percent Cover for all Sites

Categories	Buck Island	Cane Bay	Jacks Bay	Lang Bank	Long Reef/ Eagle Ray	Salt River East Wall	Salt River West Wall	Sprat Hole
Gorgonians (GO) - go	0.00	1.45	0.00	0.13	2.96	0.08	0.00	0.00
Briareum asbestinum (BRIA) - go	0.74	NA	0.00	0.07	NA	0.00	0.00	0.14
Erythropodium caribaeorum (ERYTH) - go	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	NA	0.00	0.00	NA	0.00	0.00	0.08
Soft Coral - Sea Fan (FAN) - go	0.22	NA	0.29	0.51	NA	0.13	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.33	NA	0.06	0.91	NA	0.14	0.05	0.34
Soft Coral - Rod form (ROD) - go	4.97	NA	1.43	2.05	NA	4.58	1.31	0.25
Soft Coral - Whip form (WHIP) - go	0.00	NA	0.00	0.11	NA	0.56	0.00	0.00
Cliona delitrix (CLIO) - spo	0.00	NA	0.06	0.00	NA	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	NA	0.00	0.19	NA	0.07	0.17	0.08
Barrel/Vase Sponge (BASP) - spo	0.00	NA	0.06	0.51	NA	1.08	1.23	0.08
Boring Sponge (BOSP) - spo	0.00	NA	0.18	0.00	NA	0.00	0.23	0.00
Encrusting Sponge (ENSP) - spo	0.00	NA	2.16	1.65	NA	1.47	0.98	1.13
Rope Sponge (ROPE) - spo	0.00	NA	0.36	0.33	NA	0.86	0.41	0.00
Tube Sponge (TUBE) - spo	0.00	NA	0.00	0.27	NA	0.49	0.00	0.78
Sponge (SPO) - spo	0.00	1.39	0.12	0.80	5.02	0.45	0.12	0.42
Palythoa caribaeorum (PALY) - zo	0.00	NA	0.00	0.00	NA	0.00	0.00	0.06
Zoanthus sociatus (ZOSO) - zo	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.05	0.45	0.07	0.12	0.00
Anemone (ANEM) - other	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Corallimorpharians (CMOR) - other	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Macro Algae (MACA) - maca	2.30	3.84	0.00	0.05	0.69	0.70	0.88	5.16
Amphiroa spp. (AMPH) - maca[calc]	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	25.37	0.70	33.00	0.94	0.63	0.07	3.09	0.33
Halimeda spp. (HALI) - maca[calc]	1.23	0.00	0.35	0.00	0.00	0.07	0.00	1.68
Microdictyon spp. (MICRO) - maca	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.11	0.06	0.06	0.00	0.00	4.07	0.41	0.00
Sargassum spp. (SARG) - maca	1.18	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Schizothrix spp. (SCHIZ) - maca	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coraline Algae (CALG) - calg	0.22	4.48	3.62	1.20	0.00	0.49	2.29	1.70
Dead coral w/ turf algae (DCA) - dca	31.83	61.00	49.70	82.53	69.73	71.24	78.04	60.96
Boulder (B)	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
Sand/Sediment (S)	14.54	2.52	0.06	2.01	10.03	1.97	0.11	0.15
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.13	0.00	0.05	3.47	0.00	0.00	0.06
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Unknown (UNK)	0.71	1.08	0.70	0.67	0.81	1.04	1.03	1.89

Buck Island

Percent Cover by Transect

Categories	T1	T2	T3	mean % cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	2.21	0.00	0.74
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.33	0.32	0.00	0.22
Soft Coral - Plume form (PLUME) - go	0.66	0.32	0.00	0.33
Soft Coral - Rod form (ROD) - go	5.63	5.68	3.60	4.97
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	0.00	0.00	0.00
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	0.00	0.00	0.00	0.00
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) -other	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	3.97	2.52	0.40	2.30
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	25.83	30.28	20.00	25.37
Halimeda spp. (HALI) - maca[calc]	2.98	0.32	0.40	1.23
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00
Lagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.33	0.00	0.00	0.11
Sargassum spp. (SARG) - maca	0.33	0.00	3.20	1.18
Schizothrix spp. (SCHIZ) - maca	0.00	0.32	0.00	0.11
Coralline Algae (CALG) - calg	0.66	0.00	0.00	0.22
Dead coral w/ turf algae (DCA) - dca	34.77	27.13	33.60	31.83
Boulder (B)	0.00	0.00	0.00	0.00
Sand/Sediment (S)	11.92	16.09	15.60	14.54
Rubble (R)	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00
Unknown (UNK)	1.32	0.00	0.80	0.71

Cane Bay

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.00	2.34	2.71	2.90	0.39	0.38	1.45
Briareum asbestinum (BRIA) - go	NA						
Erythropodium caribaeorum (ERYTH) - go	NA						
Encrusting Gorgonian (ENGO) - go	NA						
Soft Coral - Sea Fan (FAN) - go	NA						
Soft Coral - Plume form (PLUME) - go	NA						
Soft Coral - Rod form (ROD) - go	NA						
Soft Coral - Whip form (WHIP) - go	NA						
Clionia delitrix (CLIO) - spo	NA						
Ball Sponge (BALL) - spo	NA						
Barrel/Vase Sponge (BASP) - spo	NA						
Boring Sponge (BOSP) - spo	NA						
Encrusting Sponge (ENSP) - spo	NA						
Rope Sponge (ROPE) - spo	NA						
Tube Sponge (TUBE) - spo	NA						
Sponge (SPO) - spo	2.68	0.39	0.78	0.72	0.79	3.01	1.39
Palythoa caribaeorum (PALY) - zo	NA						
Zoanthus sociatus (ZOSO) - zo	NA						
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	NA						
Corallimorpharians (CMOR) -other	NA						
Macro Algae (MACA) - maca	5.36	1.95	2.71	4.35	0.00	8.65	3.84
Amphiroa spp. (AMPH) - maca[calc]	NA						
Cladophora spp. (CLAD) - maca	NA						
Dictyota spp. (DICT) - maca	0.38	0.78	0.39	0.36	0.39	1.88	0.70
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	NA						
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.38	0.00	0.00	0.00	0.00	0.00	0.06
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	1.53	5.47	3.88	8.70	3.94	3.38	4.48
Dead coral w/ turf algae (DCA) - dca	79.69	59.38	49.61	47.46	69.69	60.15	61.00
Boulder (B)	NA						
Sand/Sediment (S)	3.45	1.95	1.16	3.99	0.79	3.76	2.52
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.39	0.38	0.13
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	1.53	0.78	1.55	0.72	0.39	1.50	1.08

Jacks Bay

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.34	0.00	0.00	0.00	1.41	0.00	0.29
Soft Coral - Plume form (PLUME) - go	0.00	0.37	0.00	0.00	0.00	0.00	0.06
Soft Coral - Rod form (ROD) - go	0.00	2.23	2.45	0.69	2.47	0.72	1.43
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.37	0.00	0.00	0.00	0.00	0.06
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.00	0.00	0.36	0.06
Boring Sponge (BOSP) - spo	0.34	0.37	0.00	0.00	0.35	0.00	0.18
Encrusting Sponge (ENSP) - spo	4.42	0.37	2.10	1.04	2.47	2.54	2.16
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.71	1.45	0.36
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	0.34	0.37	0.00	0.00	0.00	0.00	0.12
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	33.33	42.75	24.13	26.04	42.05	29.71	33.00
Halimeda spp. (HALI) - maca[calc]	0.68	0.00	0.00	0.00	1.41	0.00	0.35
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.34	0.00	0.00	0.00	0.00	0.00	0.06
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	2.72	7.43	4.55	5.56	0.35	1.09	3.62
Dead coral w/ turf algae (DCA) - dca	47.96	39.41	54.55	54.51	43.46	58.33	49.70
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.00	0.35	0.00	0.00	0.06
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	1.02	0.37	1.05	0.35	0.71	0.72	0.70

Lang Bank	Percent Cover by Transect						
Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.35	0.00	0.00	0.42	0.00	0.00	0.13
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.42	0.00	0.00	0.07
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.43	0.00	0.00	0.32	2.30	0.51
Soft Coral - Plume form (PLUME) - go	1.73	2.17	1.12	0.42	0.00	0.00	0.91
Soft Coral - Rod form (ROD) - go	0.69	0.00	2.24	5.44	0.32	3.61	2.05
Soft Coral - Whip form (WHIP) - go	0.35	0.00	0.00	0.00	0.32	0.00	0.11
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	1.12	0.00	0.00	0.00	0.19
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	1.12	0.00	0.00	1.97	0.51
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.69	0.87	4.10	0.00	0.32	3.93	1.65
Rope Sponge (ROPE) - spo	0.69	1.30	0.00	0.00	0.00	0.00	0.33
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.97	0.66	0.27
Sponge (SPO) - spo	1.73	0.43	0.37	0.00	1.29	0.98	0.80
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.33	0.05
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.00	0.00	0.00	0.00	0.00	0.33	0.05
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	1.74	0.00	0.00	1.94	1.97	0.94
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	0.00	0.00	0.00	0.00	1.94	5.25	1.20
Dead coral w/ turf algae (DCA) - dca	86.51	84.35	82.09	86.61	84.47	71.15	82.53
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	2.42	4.35	3.36	0.00	1.29	0.66	2.01
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.32	0.00	0.05
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.35	0.43	0.00	0.00	3.24	0.00	0.67

Long Reef/ Eagle Ray

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	2.39	2.85	4.60	3.70	3.87	0.38	2.96
Briareum asbestinum (BRIA) - go	NA						
Erythropodium caribaeorum (ERYTH) - go	NA						
Encrusting Gorgonian (ENGO) - go	NA						
Soft Coral - Sea Fan (FAN) - go	NA						
Soft Coral - Plume form (PLUME) - go	NA						
Soft Coral - Rod form (ROD) - go	NA						
Soft Coral - Whip form (WHIP) - go	NA						
Clionia delitrix (CLIO) - spo	NA						
Ball Sponge (BALL) - spo	NA						
Barrel/Vase Sponge (BASP) - spo	NA						
Boring Sponge (BOSP) - spo	NA						
Encrusting Sponge (ENSP) - spo	NA						
Rope Sponge (ROPE) - spo	NA						
Tube Sponge (TUBE) - spo	NA						
Sponge (SPO)	4.78	5.69	4.98	5.56	4.23	4.91	5.02
Palythoa caribaeorum (PALY) - zo	NA						
Zoanthus sociatus (ZOSO) - zo	NA						
Zoanthids (ZO)	0.48	0.41	0.00	0.74	1.06	0.00	0.45
Anemone (ANEM) - other	NA						
Corallimorpharians (CMOR) -other	NA						
Macro algae (MACA)	0.48	0.00	0.00	2.22	1.06	0.38	0.69
Amphiroa spp. (AMPH) - maca[calc]	NA						
Cladophora spp. (CLAD) - maca	NA						
Dictyota (DICT)	0.96	2.03	0.77	0.00	0.00	0.00	0.63
Halimeda (HALI)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	NA						
Liagora (LIAG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora (LOBO)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum (SARG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix (SCHIZ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline algae (CALG)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dead coral with turf algae (DCA)	76.56	73.17	65.52	71.85	48.24	83.02	69.73
Boulder (B)	NA						
Sand (S)	5.74	7.32	14.18	8.15	22.89	1.89	10.03
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other organisms (O)	0.00	0.81	1.53	0.00	15.85	2.64	3.47
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	1.44	0.81	1.53	0.00	1.06	0.00	0.81

Salt River East Wall

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.45	0.00	0.00	0.00	0.00	0.00	0.08
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.40	0.00	0.39	0.00	0.00	0.13
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.00	0.00	0.45	0.39	0.14
Soft Coral - Rod form (ROD) - go	0.45	4.44	5.31	4.28	7.59	5.43	4.58
Soft Coral - Whip form (WHIP) - go	0.90	0.40	0.00	1.17	0.89	0.00	0.56
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.00	0.45	0.00	0.07
Barrel/Vase Sponge (BASP) - spo	0.45	4.84	0.41	0.00	0.00	0.78	1.08
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	1.80	0.40	4.08	0.39	1.34	0.78	1.47
Rope Sponge (ROPE) - spo	0.45	0.81	0.00	2.33	0.00	1.55	0.86
Tube Sponge (TUBE) - spo	0.00	0.00	1.22	0.00	1.34	0.39	0.49
Sponge (SPO) - spo	1.80	0.00	0.00	0.00	0.89	0.00	0.45
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanths (ZO) - zo	0.00	0.00	0.41	0.00	0.00	0.00	0.07
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.90	0.00	2.04	0.39	0.89	0.00	0.70
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.00	0.40	0.00	0.00	0.00	0.00	0.07
Halimeda spp. (HALI) - maca[calc]	0.00	0.40	0.00	0.00	0.00	0.00	0.07
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	3.15	2.82	5.31	4.67	5.36	3.10	4.07
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	1.35	0.40	0.00	0.00	0.00	1.16	0.49
Dead coral w/ turf algae (DCA) - dca	78.83	70.56	68.57	74.71	63.84	70.93	71.24
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.81	2.04	3.50	3.13	2.33	1.97
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	2.25	1.21	0.82	0.39	0.00	1.55	1.04

Salt River West Wall

Percent Cover by Transect

Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.00	0.33	0.00	0.00	0.00	0.05
Soft Coral - Rod form (ROD) - go	0.35	1.69	0.98	1.44	1.40	2.00	1.31
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.33	0.72	0.00	0.00	0.17
Barrel/Vase Sponge (BASP) - spo	0.00	2.36	0.33	0.36	0.35	4.00	1.23
Boring Sponge (BOSP) - spo	0.00	0.00	0.65	0.00	0.70	0.00	0.23
Encrusting Sponge (ENSP) - spo	0.69	1.35	1.63	1.80	0.00	0.40	0.98
Rope Sponge (ROPE) - spo	0.00	0.34	0.65	0.72	0.35	0.40	0.41
Tube Sponge (TUBE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sponge (SPO) - spo	0.00	0.34	0.00	0.00	0.00	0.40	0.12
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.72	0.00	0.00	0.12
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	0.00	0.00	0.00	0.36	4.55	0.40	0.88
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.35	11.15	5.56	0.72	0.35	0.40	3.09
Halimeda spp. (HALI) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	1.04	0.00	0.00	0.00	1.40	0.00	0.41
Sargassum spp. (SARG) - maca	0.00	0.00	0.33	0.00	0.00	0.00	0.05
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	1.74	4.05	6.54	0.36	1.05	0.00	2.29
Dead coral w/ turf algae (DCA) - dca	82.99	72.64	66.67	87.77	79.37	78.80	78.04
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.65	0.00	0.00	0.00	0.11
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diseased Coral (DCOR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (UNK)	0.69	0.34	0.98	0.72	1.05	2.40	1.03

Sprat Hole	Percent Cover by Transect						
Categories	T1	T2	T3	T4	T5	T6	mean % cover
Gorgonians (GO) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Briareum asbestinum (BRIA) - go	0.44	0.40	0.00	0.00	0.00	0.00	0.14
Erythropodium caribaeorum (ERYTH) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Gorgonian (ENGO) - go	0.00	0.00	0.00	0.46	0.00	0.00	0.08
Soft Coral - Sea Fan (FAN) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soft Coral - Plume form (PLUME) - go	0.00	0.40	0.00	0.00	0.91	0.72	0.34
Soft Coral - Rod form (ROD) - go	0.00	0.81	0.00	0.00	0.00	0.72	0.25
Soft Coral - Whip form (WHIP) - go	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clionia delitrix (CLIO) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ball Sponge (BALL) - spo	0.00	0.00	0.00	0.46	0.00	0.00	0.08
Barrel/Vase Sponge (BASP) - spo	0.00	0.00	0.00	0.46	0.00	0.00	0.08
Boring Sponge (BOSP) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encrusting Sponge (ENSP) - spo	0.00	1.61	1.77	1.83	0.45	1.08	1.13
Rope Sponge (ROPE) - spo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tube Sponge (TUBE) - spo	1.33	2.02	0.44	0.00	0.91	0.00	0.78
Sponge (SPO) - spo	0.44	0.40	0.88	0.00	0.45	0.36	0.42
Palythoa caribaeorum (PALY) - zo	0.00	0.00	0.00	0.00	0.00	0.36	0.06
Zoanthus sociatus (ZOSO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zoanthids (ZO) - zo	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anemone (ANEM) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corallimorpharians (CMOR) - other	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macro Algae (MACA) - maca	9.73	5.24	3.54	4.13	3.64	4.68	5.16
Amphiroa spp. (AMPH) - maca[calc]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cladophora spp. (CLAD) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dictyota spp. (DICT) - maca	0.88	0.40	0.00	0.00	0.00	0.72	0.33
Halimeda spp. (HALI) - maca[calc]	3.98	0.81	2.21	0.00	0.91	2.16	1.68
Microdictyon spp. (MICRO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liagora spp. (LIAG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lobophora variegata (LOBO) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargassum spp. (SARG) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schizothrix spp. (SCHIZ) - maca	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coralline Algae (CALG) - calg	1.77	3.63	0.00	1.38	0.91	2.52	1.70
Dead coral w/ turf algae (DCA) - dca	51.77	54.84	68.14	75.69	54.55	60.79	60.96
Boulder (B)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand/Sediment (S)	0.00	0.00	0.00	0.00	0.91	0.00	0.15
Rubble (R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (P)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Organisms (O)	0.00	0.00	0.00	0.00	0.00	0.36	0.06
Diseased Coral (DCOR)	0.88	0.00	0.00	0.00	0.00	0.36	0.21
Unknown (UNK)	0.00	0.40	6.19	2.29	1.36	1.08	1.89